DOCUMENT RESUME

ED 142 916 CG 011 658

AUTHOR Lokan, Janice J.; Boss, Marvin W.
TITLE The Relationship Between Locus of Control and Indices of Vocational Maturity in Adolescents.
PUB DATE Apr 77
NOTE 17p.; Paper presented at the Annual Meeting of the American Educational Research Association (April 4-8, 1977, New York, N.Y.)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Adolescents; *Career Exploration; Decision Making Skills; *Individual Development; *Locus of Control; *Occupational Choice; Research Projects; Secondary Education; *Social Development; *Vocational Maturity
IDENTIFIERS Career Development Inventory; *Super (Donald E)

ABSTRACT

Super's self concept theory of vocational development has been criticized for its lack of attention to individual difference variables, particularly with regard to explaining why appropriate vocational behaviours are attained more readily by some individuals than by others. Partial explanation is provided here for the relationshp between locus of control and vocational maturity. This study further aims to promote some understanding of why the appropriate behaviors are developed more readily by some individuals than by others as a result of examining the personality variable "locus of control" in relation to indices of vocational maturity in adolescence. (Author/VG)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED142916

12.11

research for action

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

THE RELATIONSHIP BETWEEN LOCUS OF CONTROL AND INDICES OF VOCATIONAL MATURITY IN ADOLESCENTS

Janice J. Lokan
Ottawa Board of Education

Marvin W. Boss
University of Ottawa

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Janice J. Lokan

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

Paper presented at American Educational Research Association Annual Meeting, New York City, 1977

CG 011658

research centre / centre de recherches
The Ottawa Board of Education / Le Conseil scolaire d'Ottawa
Location: 662 Lyon St. S., K1S 3Z2, tel. 563-2408 Mailing address: 330 Gilmour St., K2P 0P9

The Relationship between Locus of Control and Indices of Vocational Maturity in Adolescents[1]

The process of choosing an occupation in our society has been recognised for some time to be complex, extending over many years of a person's life. One of the most crucial periods in this process occurs during the high school years, when students first meet the need to make decisions which may vitally affect their future careers. In view of the growing number of career possibilities and educational programme options which have become available in recent years, it seems likely that it will become more difficult for many high school students to make career-related decisions wisely. There is, therefore, a pressing need for counselling and guidance personnel to understand the nature of successful pre-vocational coping behaviours, how these behaviours develop, and to what factors they are related.

An important vocational psychology theory focussing on the development of vocationally relevant behaviours during adolescence is that of Professor D. E. Super. Super's theory and research provide detailed expositions of the vocational behaviours deemed appropriate for adolescents in western societies, and the process of "Exploration" through which these behaviours are thought to develop. However, the theory has been criticized for its lack of attention to individual difference variables (Greenhaus, 1971). This lack is particularly apparent in the theory's failure to deal adequately with the question of why the appropriate behaviours are developed more readily by some individuals than by others. The study described here aimed to provide some understanding of this question by examining the personality variable locus of control in relation to indices of vocational maturity in adolescence.

---

1 Paper presented at American Educational Research Association Annual Conference, New York City, April 1977.

Theoretical Framework

In the context of his theory of vocational development, Super (1957, 1963) defines the vocationally mature adolescent to be one who is coping successfully with the task of crystallizing a vocational preference. To be able to crystallize a preference, the adolescent must first develop his vocational self concept, which he does by engaging in the process of Exploration. The Exploration process itself is characterized by search, trial, experimentation and hypothesis testing as the adolescent finds out about himself in relation to the world of work.

In progressing toward the goal of crystallizing a vocational preference, the vocationally mature adolescent manifests certain characteristic attitudes and behaviours. He is aware that he needs to plan for his future, and consequently seeks information about himself, educational programmes and jobs, learns how to use this information in making decisions, and plays roles in order to test hypotheses about himself as he engages systematically in the Exploration process.

Rotter (1966, 1972) describes locus of control as an attribute of personality on which individuals are distributed according to their degree of belief in their own control over events in their lives. Internals believe that events occur primarily as a result of their own behaviour, while Externals see events following their behaviour as primarily determined by outside forces (e.g. luck, chance, powerful others).

Internals have been found to have greater need for achievement, to be more aware of aspects in their environment which provide information useful for their future behaviour, to seek and use more information in problem-solving situations presented to them as skill rather than chance controlled, to make more use of past learning experiences in achieving future goals and to have made more plans to better their life conditions, than Externals.

Given the importance of active, systematic information-seeking behaviour in adolescent vocational development, it seems likely that students who have the propensity to engage in such behaviour in their personality make-up will tend also to be those who are coping more effectively with the vocational developmental tasks required of their age group. Similarly, those who tend to be planful and to be aware of useful cues in their environment seem likely to be those who are engaging more effectively in the Exploration process. It was, therefore, hypothesized that adolescents with a relatively internal locus of control (Internals) would tend to exhibit greater maturity in their vocational behaviour than adolescents with a relatively external locus of control (Externals). The hypothesis that third year (grade eleven) high school students would tend to be more vocationally mature than first year (grade nine) students, arising from the developmental aspects of Super's theory, was also investigated.

Methodology and Design

1. The Sample

Male and female students from three classes at each of grades nine and eleven from each of five suburban composite high schools in Ottawa were involved in the study. Random sampling of schools or classes was not possible. However, care was taken to select schools and classes which were as representative as possible of classes containing students of average or above average intelligence in the Ottawa area. Altogether, the sample contained more than 700 students.

2. Instrumentation

An adaptation (for use in Canada) of the Career Development Inventory (CDI) (Super et al, 1971) was used to measure vocational maturity,

and the short form of the Nowicki-Strickland Locus of Control Scale for Children (LC scale) (Nowicki and Strickland, 1973) was used to measure degree of internality of control.

The CDI contains 91 multiple-choice items grouped into three scales - Scale A: Planning Orientation, Scale B: Resources for Exploration and Scale C: Information and Decision Making. Scales A and B are attudinal, and are moderately correlated with each other ($r \approx 0.5$), while Scale C, which is cognitive, is correlated at a much lower level ($r \approx 0.2$) with the other two scales. Each scale measures a major dimension of vocational maturity appropriate to the first years of the Exploration stage of vocational development, according to Super's theory. The version of the CDI adapted for Canadian use was validated prior to the present study. Test-retest reliabilities of the scales range from 0.87 for Scale A to 0.67 for Scale C after intervals of two to four weeks, and internal consistency reliabilities range from 0.93 for Scale A to 0.71 for Scale C.

The short form of the LC scale consists of 21 items, to each of which the respondent must answer "Yes" or "No". The scale is considered by its authors to be a measure of a generalized expectancy for the locus of control of reinforcement in children. The items describe reinforcement situations in a variety of need areas, such as affiliation, achievement and dependency. The test-retest reliability estimate after two to three weeks for the short form used with grades nine and eleven students is 0.83, while the internal consistency reliability estimate is 0.72.

3. Procedures.

Both instruments were administered to the students, one class at a time during regular English class periods, by the principal investigator and an assistant. Together, the instruments require about 50 minutes to administer. Since four of the five schools were operating with a 40-minute

class period, testing in these schools was conducted on two consecutive days. In the fifth school, which was operating with an extended class period, both instruments were given on the same day. In all cases the LC scale was given first.

4. Analyses

Logically, the three indices of vocational maturity measured by the scales of the CDI are aspects of the same construct. Hence it was appropriate to consider them as dependent variables in a multivariate analysis of variance. Independent variables were degree of internality of control (Internal vs External) and grade level, and sex and school were included as blocking factors. After an initial analysis revealed no significant effect involving school, the data were pooled across schools and a second analysis carried out. Finn's (1972) MULTIVARIANCE computer programme was used to conduct the analyses.

The locus of control groups were established after allowing a "buffer zone" of approximately one standard error of measurement (SEM) on either side of the median of the distribution of LC scores. Students scoring within one SEM unit of the median were not included because of the relatively high probability, for students in this range, of misclassification due to unreliability in the measuring instrument. Thus, the hypothesis tests were based on data for 475 of the 705 students tested.

Results

The means ($\bar{x}$) and standard deviations on the three CDI scales for the various analysis groups are presented in Table 1, and the means for each level of the three main factors are given in Table 2. Results of the three-way multivariate analysis of variance used to test the hypotheses are summarized in Table 3. For this analysis, the three CDI scales were the dependent variables, and locus of control group, grade level and sex were the independent variables. As indicated in the table, the main effects of locus of control group and grade level were significant at the .0001 level, while that of sex was significant at the .01 level. None of the interaction effects was significant.

Inspection of the mean scores in Table 1 shows that the differences between the locus of control groups and between the grade level groups were consistently in the hypothesized direction. Thus, it was concluded that Internals do tend to exhibit more mature vocational behaviour than Externals, and that grade eleven students tend to be more vocationally mature than grade nine students. In addition, it was found that males obtained scores indicative of greater vocational maturity than females. This result was felt to be not surprising in view of the likelihood that many people in our culture still believe that careers play a less important role in the lives of adult females than of adult males.

The findings presented so far all relate to the construct of vocational maturity considered as a combination of three inter-related dimensions. Generally, the findings are supportive of Super's theory which postulates that vocational maturity is developmental, and of links between Rotter's theories which suggest that the personality dimension locus of control mediates the development of mature vocational behaviours during adolescence.

By considering results of analyses conducted on a post hoc basis, it is also possible to gain some understanding of the relationships among the independent variables and vocational maturity regarded as three dimensions rather than as a unified construct. Firstly, however, Super's statements concerning the stages at which the three dimensions are presumed to develop will be reviewed.

Briefly, Super (1972) contends that

i) planning orientation (Scale A) is most appropriately fostered in the middle or junior high school, but can be expected to be lacking in many students when they enter high school (grade nine)

ii) awareness and use of resources for exploration (Scale B) normally can be expected to develop in ninth and tenth grades, following the development of an appropriate planning orientation, but that in many students this stage can be expected to continue throughout and even beyond high school

iii) possession of occupational information and knowledge of decision-making principles (Scale C), which is related to general ability and is, therefore, not necessarily an index of vocational maturity, may occur at any stage of adolescence; achievement on this dimension is likely to be indicative of vocational maturity only if achievement on the other two dimensions is high.

Given that the CDI scales measure dimensions which are developmental in the sense that an orientation toward planning is presumed to be a precondition for the use of resources for exploration, and both of these are presumed to precede development in the cognitive dimension that can be taken to be indicative of vocational maturity, it was felt that it would be appropriate to use step-down procedures as post hoc analyses. The step-down analyses are similar to analyses of covariance, in that differences

in the first scale are examined, then differences in the second with the effects of differences in the first removed statistically, and so on. The F-ratios from applying these procedures in the present study are shown in Table 4.

It can be seen that differences associated with the independent variable of locus of control group involved all three of the CDI scales. Internals scored higher than externals even after statistical control of differences in Scale A had been exercised, and they also scored higher on Scale C after the effects of differences on both Scales A and B had been controlled. Differences in the vocational maturity scales associated with grade level clearly involved only the cognitive Scale C for students at this stage of development, while differences associated with sex involved Scale A (Planning Orientation) only.

The above findings suggest that development on the two attitudinal dimensions has probably occurred in most students by the early high school years, but that considerable development along the cognitive dimension takes place at this stage, in agreement with Super's hypotheses. The finding that differences in vocational development associated with locus of control involve all three of the CDI scales suggests that locus of control is probably a more important variable than either sex or grade level in the overall vocational development of students in grades nine to eleven.

References.

Finn, J. D., MULTIVARIANCE: Univariate and Multivariate Analysis of Variance, Covariance and Regression, Ann Arbor, Michigan: National Educational Resources Inc., 1972.

Greenhaus, J. H., "Self-Esteem as an Influence on Occupational Choice and Occupational Satisfaction". Journal of Vocational Behavior, Vol. 1, 1971, 75-83.

Rotter, J. B., "Generalized Expectancies for Internal versus External Control of Reinforcement". Psychological Monographs, Vol. 80 (Whole No. 609), 1966, 1-28.

Rotter, J. B., Chance, J. E., and Phares, E. J., Applications of a Social Learning Theory of Personality, New York: Holt, Rinehart and Winston, 1972.

Super, D. E., Crites, J. O., Hummel, R. C., Moser, H. P., Overstreet, P. L. and Warnath, C. F., Vocational Development: A Framework for Research, New York: Teachers College, Columbia University, 1957.

Super, D. E., "Vocational Development in Adolescence and Early Adulthood: Tasks and Behaviors", in Career Development: Self Concept Theory, Princeton, New Jersey: College Entrance Examination Board, 1963.

Super, D. E., Bohn, M. (Jr.), Forrest, D. J., Jordaan, J. P., Lindeman, R. H. and Thompson, A. S., Career Development Inventory, Form I, New York: Teachers College, Columbia University, 1971.

Super, D. E. and Forrest, D. J., Career Development Inventory, Form I: Preliminary Manual for Research and Field Trial, New York: Teachers College, Columbia University, 1972.

Table 1.

Mean ($\bar{X}$) and Standard Deviation on Career Development Inventory Scales by Locus of Control Group, Grade Level and Sex.

LC Group	Grade Level	N	Scale A $\bar{X}$	Scale A s.d.	Scale B $\bar{X}$	Scale B s.d.	Scale $\bar{X}$
I: Males							
Internal	Nine	50	110.8	17.1	253.1	42.6	16.3
	Eleven	76	110.3	23.0	258.8	40.4	19.6
External	Nine	65	95.8	20.6	220.8	47.3	15.5
	Eleven	50	94.5	21.2	222.4	32.4	17.7
II: Females							
Internal	Nine	61	98.2	23.1	243.9	45.3	17.0
	Eleven	73	106.9	20.2	255.2	42.7	19.6
External	Nine	54	90.3	18.3	225.2	40.7	15.6
	Eleven	46	96.6	19.2	235.6	44.1	18.7

Table 2.

Mean ($\overline{X}$) on Career Development Inventory Scales for Levels of Locus of Control, Grade Level and Sex Factors.

Group	N	Scale A $\overline{X}$	Scale B $\overline{X}$	Scale C $\overline{X}$
Total Internal	260	106.6	253.2	18.4
Total External	215	94.3	225.4	16.7
Total Grade Nine	230	98.4	235.0	16.1
Total Grade Eleven	245	103.5	245.9	19.0
Total Male	241	103.2	239.8	17.4
Total Female	234	98.8	241.5	17.8

Table 3.

Multivariate Analysis of Variance for Locus of Control Group (LC), Grade Level and Sex as Independent Variables and the Career Development Inventory scales as Dependent Variables

Source of Variation	d.f.	F (approx)	P
LC	3,465	20.73	0.0001
Grade Level	3,465	24.54	0.0001
Sex	3,465	4.52	0.004
LC x Grade Level	3,465	0.11	0.95
LC x Sex	3,465	1.41	0.24
Grade Level x Sex	3,465	1.64	0.18
LC x Gr. level x Sex	3,465	0.53	0.66

Table 4.

Results of Step-down Analyses for Locus of Control Group (LC), Grade Level and Sex as Independent Variables and the Career Development Inventory scales as Dependent Variables.

Source of variation	Scale A Univariate F	p	Scale B Step-down F	p	Scale C Step-down F	p
LC	40.52	.0001	15.11	.0002	4.87	.03
Grade level	2.95	09	1.19	.28	68.88	.0001
Sex	6.28	.01	3.52	.06	3.67	.06

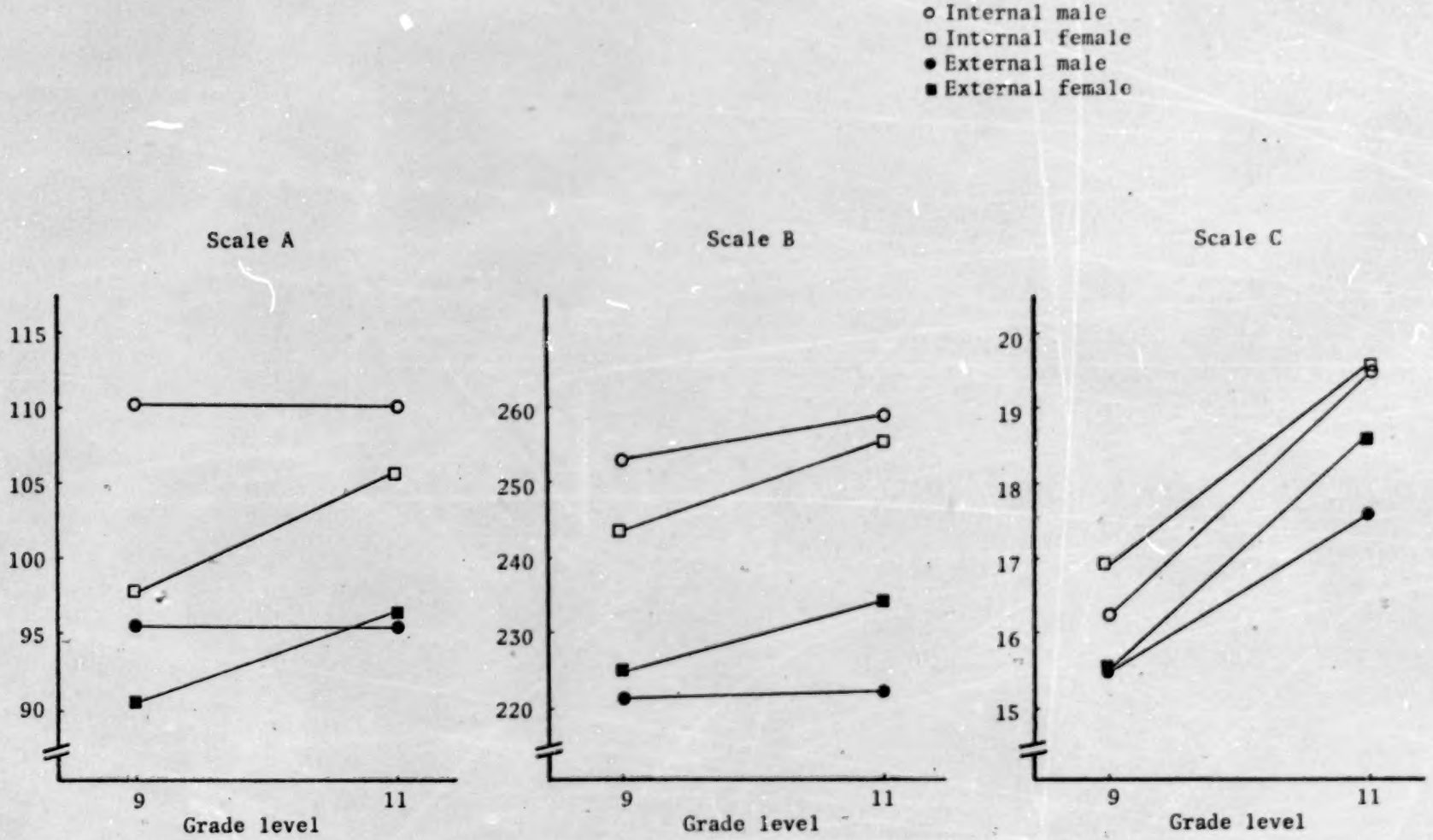

Figure 1: Means on Career Development Inventory Scales by Locus of Control Group, Sex and Grade Level.